ABSTRACT

An analyte detection system utilizing a combination of fluorescent labels for labeling particles and an analyte specific fluorescent analyte detection dye. The particles contain a combination of fluorescent labels for coding the particles and an analyte specific fluorescent dye. The particles can be used to identify and quantify analytes in an analytical sample by reaction of the analytical sample with the particles. An analytical device can identify the particles according to the combination of fluorescent labels. The device can then correlate the identified particle with the analyte specific fluorescent analyte detection dye. Multiple subpopulations of particles can be used to identify and quantify multi-analytes in a single analytical sample. Near infrared (NIR) fluorescent labels useful in the detection system are also provided.